INCH-POUND

MS8003D
24 September 2003
SUPERSEDING
MS8003C
30 June 1985

DETAIL SPECIFICATION SHEET

HOSE ASSEMBLY, POLYTETRAFLUOROETHYLENE, REUSABLE FITTINGS, HIGH TEMPERATURE, MEDIUM PRESSURE, FLARELESS-TO-FLANGE

This specification is approved for use by all
Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification and MIL-DTL-25579.

Hose cut-off factor (HCOF) for assembly with class 1 fittings: See table l.

TABLE I. Hose cut-off factor (HCOF) for assembly with class 1 fittings. 1/

Style 2/ Corrosion resistant steel (CRES)	Fitting ends		HCOF (size vs length) 3/					
	1	2	8	10	12	16	20	24
A	MS27381	MS27054	2.39	2.74	2.78	3.19	3.41	3.88
B	MS27381	MS27056	2.41	2.74	3.30	3.56	3.94	4.57
C	MS27381	MS27058	2.37	2.73	3.32	3.63	4.06	4.75
D	MS27384	MS27056	3.20					
	MS27382	MS27056		3.19	4.13	4.31	4.83	5.53
E	MS27384	MS27058	3.16					
	MS27382	MS27058		3.18	4.15	4.38	4.95	5.71
F	MS27385	MS27058	2.52					
	MS27383	MS27058		2.82	3.84	4.10	4.68	5.36
G	MS27384	MS27054	3.18					
	MS27382	MS27054		3.19	3.61	3.94	4.30	4.84
H	MS27385	MS27054	2.54					
	MS27383	MS27054		2.83	3.30	3.66	4.03	4.49
J	MS27385	MS27056	2.56					
	MS27383	MS27056		2.83	3.82	4.03	4.56	5.18

1/ Class 1 fittings, styles A through J, are made from CRES.
2/ For depiction of styles see figure 1.
3/ The HCOF is used in the following calculation to determine the hose length required to produce an assembly of a specific size, style and length: Assembly length - HCOF = Hose length. For example, the hose length required to produce an 30.00 inch length assembly of size 20, style F is calculated as follows: 30.00 - 4.68 = 25.32.

HCOF for assembly with class 2 fittings: See table ll.

TABLE II. HCOF for assembly with class 2 fittings. 1/

Styles 2/ (Aluminum and CRES)	Fitting ends		HCOF (size vs length) 3/					
	1	2	8	10	12	16	20	24
K	MS27381	MS27054	2.39	2.74	2.78	3.19	3.41	3.88
M	MS27381	MS27056	2.41	2.74	3.30	3.56	3.94	4.57
N	MS27381	MS27058	2.37	2.73	3.32	3.63	4.06	4.75
P	MS27384	MS27056	3.20					
	MS27382	MS27056		3.19	4.13	4.31	4.83	5.53
R	MS27384	MS27058	3.16					
	MS27382	MS27058		3.18	4.15	4.38	4.95	5.71
S	MS27385	MS27058	2.52					
	MS27383	MS27058		2.82	3.84	4.10	4.68	5.36
T	MS27384	MS27054	3.18					
	MS27382	MS27054		3.19	3.61	3.94	4.30	4.84
U	MS27385	MS27054	2.54					
	MS27383	MS27054		2.83	3.30	3.66	4.03	4.49
V	MS27385	MS27056	2.56					
	MS27383	MS27056		2.83	3.82	4.03	4.56	5.18

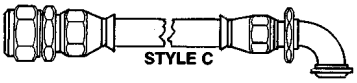
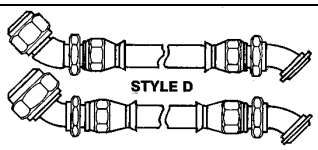
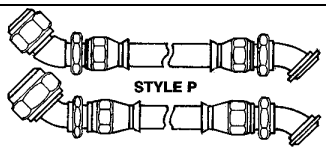
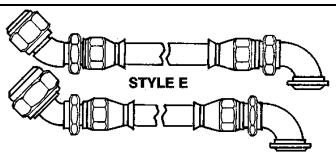
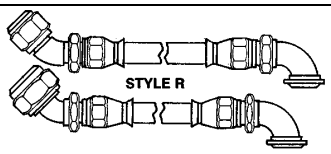
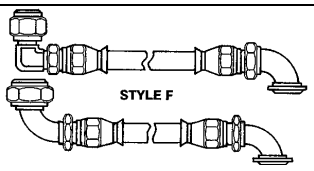
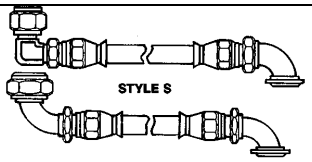
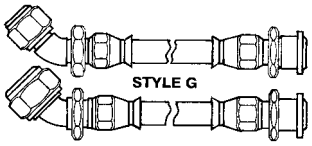
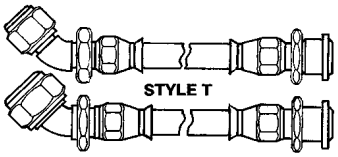
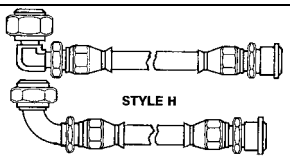
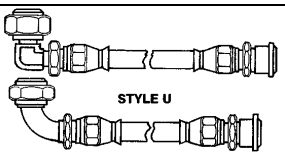
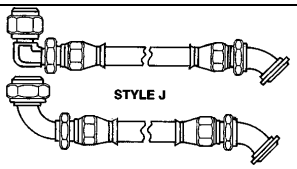
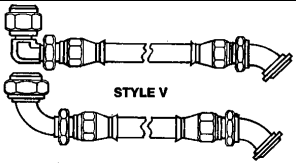
1/ Class 2 fittings, styles K through V, are made from combination of aluminum and CRES.
2/ For depiction of styles see figure 1.
3/ The HCOF is used in the following calculation to determine the hose length required to produce an assembly of a specific size, style and length: Assembly length - HCOF = Hose length. For example, the hose length required to produce an 30.00 inch length assembly of size 20, style F is calculated as follows: 30.00 - 4.68 = 25.32.

Protective sleeve code: See table lll.

TABLE III. Protective sleeve code.

Code	Type
A	SAE AS1072 sleeve, fire protection, silicone covered, temperature ranging from -65°F to 500°F, secured with CRES bands as required. 1/
B	SAE AS1073 - code B sleeve, abrasion protection, heat shrinkable, black polyolefin, temperature ranging from -65°F to 250 °F.
C	SAE AS1291 - code A sleeve, chafe guard, extruded seamless white PTFE, temperature ranging from -65°F to 450°F, secured with CRES bands as required.
D	SAE AS1291 - code C sleeve, chafe guard, extruded seamless transparent FEP, temperature ranging from -65°F to 350°F, secured with CRES bands as required.
E	SAE AS1298 sleeve, heavy wall chafe guard, extruded seamless black PTFE, temperature ranging from -65°F to 450°F, secured with CRES bands as required.
L	Lock-wire hole
F	Code A + L
G	Code B + L
H	Code C + L
J	Code D + L
K	Code E + L

1/ To prevent wicking of fluids, the cut end of the fire protective sleeve (code A) shall be coated with Room Temperature Vulcanized (RTV) silicone rubber prior to installation. After installation, cracks and voids in the fire protective sleeve shall be coated with RTV rubber to prevent exposure of asbestos or fiberglass.

Class 1 fittings (450°F) Corrosion resistant steel	Class 2 fittings (275°F) Combination aluminum and corrosion resistant steel
End 1 End 2	End 1 End 2
	
	
	
	
	
	
	
	
	

NOTES:
1. See tables I and II for fitting ends and HCOF.
2. Fittings shall mate with parts designed to SAE AS33514 and the mounting pad as shown on MS33786.

FIGURE 1. Classes 1 and 2 hose assembly styles with flareless-to-flange reusable fittings.

REQUIREMENTS:

Dimensions: Unless otherwise specified, all dimensions are in inches.

Fittings: All fittings shall be qualified in accordance with MIL-DTL-27272.

Hose: The hose shall be qualified in accordance with MIL-DTL-27267.

Assembly classification: Class 1 and class 2 hose assemblies, as specified in MIL-DTL-25579, have been incorporated into the Part or Identifying Number (PIN) as a part of styles (see tables I and II and figure 1).

Angular alignment: Hose assemblies with elbow fittings on each end shall have the angular orientation between the elbows measured counter-clockwise from the centerline of the nearest fitting, positioned at six-o'clock, to the centerline of the other fitting (see figure 2). The elbow fitting drop height shall be as shown on figure 3 and table IV. When applicable, the angular alignment shall be expressed in three digits and specified in the PIN.

Protective sleeve: If required, the hose assembly shall include a protective sleeve (see table III) and its code shall be included in the PIN. Fire protective sleeve shall be subjected to testing in accordance with MIL-DTL-25579.

Assembly length: Hose assembly shall be furnished in lengths as specified in the contract or purchase order (see MIL-DTL-25579); however, tolerances on the length of each hose assembly shall be as follows:

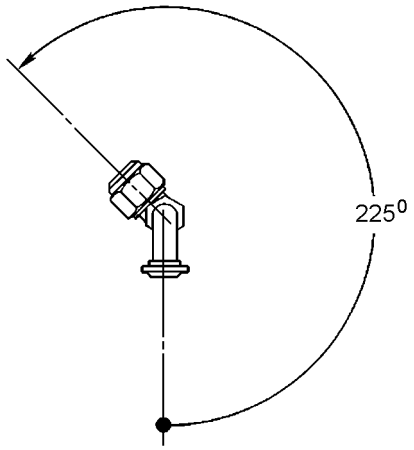
a. ± 1/8 inch for lengths under 18 inches.
b. ± 1/4 inch for lengths from 18 inches to 36 inches.
c. ± 1/2 inch for lengths from 36 inches to 50 inches.
d. ± 1% for lengths over 50 inches.

Flareless fitting, hose connector design: Use MIL-DTL-25579/1 for application of NAS 1760 design.

TABLE IV. Size code and elbow fitting drop height.

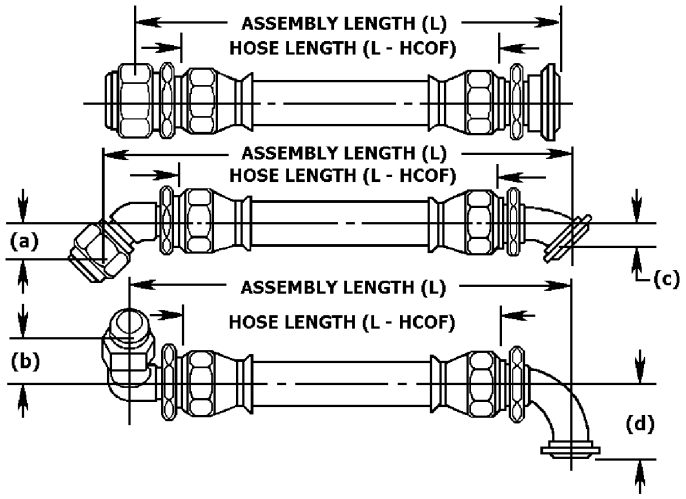
Size	Reference tube OD	Size code	Maximum drop height of elbow fitting			
			(a) 1/	(b) 1/	(c) 1/	(d) 1/
8	0.500	H	0.642	1.072	0.458	0.927
10	0.625	J	0.760	1.427	0.410	0.931
12	0.750	K	0.835	1.661	0.503	1.191
16	1.000	M	0.889	1.811	0.540	1.317
20	1.250	N	0.997	2.091	0.605	1.535
24	1.500	P	1.190	2.473	0.659	1.723

1/ Dimensions (a), (b), (c) and (d) are depicted on figure 3.



NOTE: Angular alignment shall be measured in degrees with a tolerance of ±2°.

FIGURE 2. Measurement of angular alignment between elbow fittings.



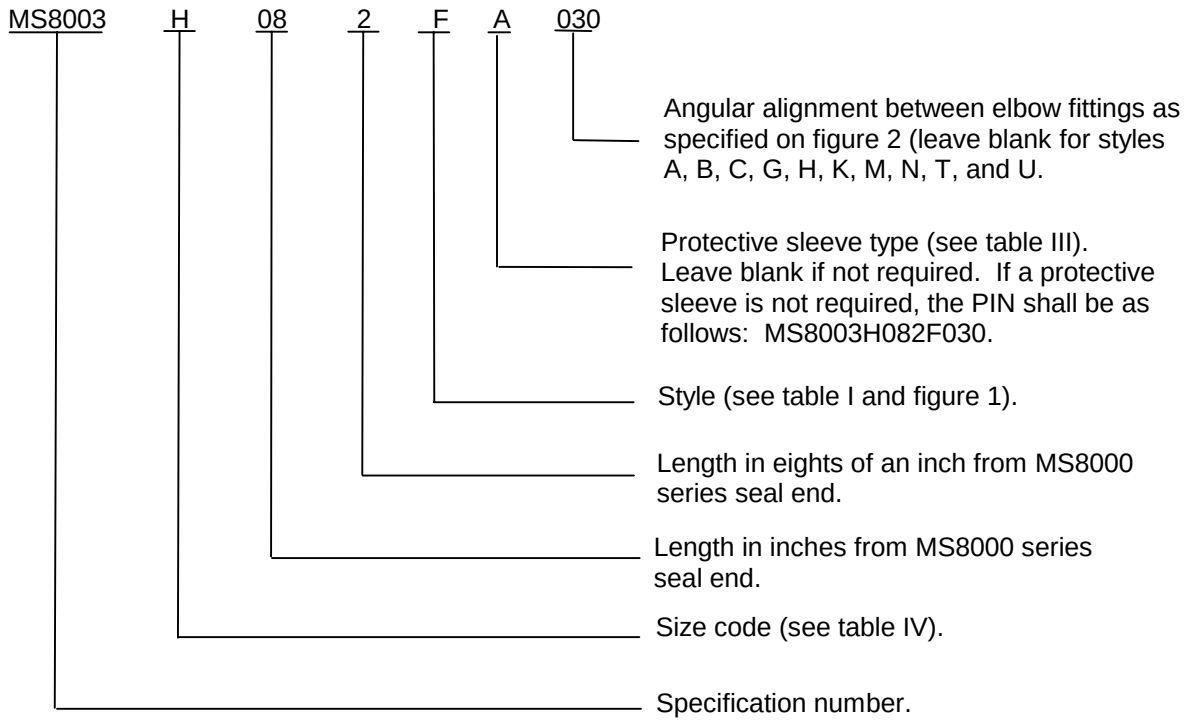
NOTES:

1. Hose assembly length “L” shall be measured, with the hose laid out horizontally and straight between the centers of the nipple end and the flange-sealing surface, along a straight line parallel to the hose length.
2. See table IV for dimensions of (a), (b), (c) and (d). Dimensions (a) and (b) are measured to the end of a ball nose style fitting. Adjustments should be made for a NAS 1760 style fitting see requirements application of NAS 1760 and ball nose style fitting.

FIGURE 3. Elbow fitting drop height, dimensions (a), (b), (c) and (d).

PIN: The PIN for each hose assembly shall include its size code, length, style, protective sleeve type, and the angular alignment between the elbow fittings, as applicable.

Example: The PIN for an 8.250 inch (209.55 mm) length, style F hose assembly with a .500 inch (12.70 mm) tube OD, a fire protective sleeve in accordance with SAE AS1072, and a 30° between the elbow fittings shall be as depicted below.



Changes from previous issue: Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

CONCLUDING MATERIAL

Custodians:
Army - AV
Navy - AS
Air Force - 99
DLA - CC

Review activities:
Army - AR, AT, EA, MI
Navy - MC, SA, SH
Air Force - 71

Preparing activity:
DLA - CC

(Project 4720-0203-000)